



The effects of anthropogenic global changes on immune functions and disease resistance

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Year: 2010
Journal: Annals of The New York Academy of Sciences. 1195: 129-148

Abstract:

Humans are changing the environmental conditions of our planet, and animal immune functions are being affected by these modifications. For instance, a diversity of chemical contaminants is entering ecosystems and modifying immune functions directly or indirectly through altered host-parasite interactions. Also, global temperature changes have caused outbreaks of disease that have decimated and even extirpated some host species, outcomes partially driven via immune alterations. Finally, some invasive species are immunologically distinct or impose stress on native species, factors that may facilitate the establishment of nonnative hosts as well as parasite transmission to native species. Here, we summarize the known and likely effects of pollutants, nonnative species introductions, and increases in ambient temperature on host immune functions and infections. We then identify future directions for research given our sparse knowledge of immune variation in natural populations. In sum, we advocate integrative, multidisciplinary work at diverse spatial and temporal scales to assess and prevent anthropogenic global changes from further compromising animal immune functions.

Source: <http://dx.doi.org/10.1111/j.1749-6632.2010.05454.x>

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Temperature

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact:

specification of health effect or disease related to climate change exposure

Climate Change and Human Health Literature Portal

Health Outcome Unspecified

Resource Type: ☒

format or standard characteristic of resource

Review

Timescale: ☒

time period studied

Time Scale Unspecified